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ABSTRACT

In choosing statistics texts for social science students, both the matter and the mode of presentation must be considered. Selecting a statistics text is not as straightforward as selecting a text in the student's major field. Five instruments were developed to explore aspects of selection of statistics texts. These are: (1) a student survey for currently used textbooks; (2) an instructor survey for currently used textbooks; (3) an instructor survey of what the ideal text would be; (4) an expert evaluation instrument that may be used on any statistics textbook; and (5) an instrument covering relevant objective information about any statistics textbook. The decision to use a student evaluation was based on the importance of judging a book's utility at least partly on its ability to reach its intended audience. All five instruments are appended. (Contains 12 references.) (SLD)

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ESTABLISHING OBJECTIVE CRITERIA FOR EVALUATING STATISTICS TEXTS

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Paper presented at the annual meeting of
the American Educational Research Association,
April, New Orleans

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How to choose textbooks for college students presents different problems for instructors than choosing textbooks for the lower grades. At the college level, students are assumed to have enough knowledge, ability and motivation to overcome deficiencies in style in a text if the content of the book meets the needs of a course. At the same time, students at the college level have a better understanding of what constitutes a well-written and comprehensive textbook, and may therefore judge textbooks more stringently.

The problem of choosing a textbook is compounded when the subject matter is not in the main area of concentration for the intended college audience. Presentation then becomes much more important in order to compensate for a lack of background in the student. Thus, in choosing statistics textbooks for social science students, both the matter and the mode of presentation have to be considered. Choosing an effective statistics text can also be a difficult task for instructors because the instructors are unlikely to feel "math anxiety," whereas their students may not have had a mathematics course in many years, or otherwise may not feel comfortable with mathematical thinking.

The aspects of how instructors should evaluate and compare college texts in general has been discussed in several articles, although this topic has not received the wide treatment that selection of texts for the lower grades has. Several authors have offered lists or forms to direct overall evaluation methods for textbooks (Prosser & Bondavalli, 1978; Talmage, 1981; Redei, 1984).

Others have focused on single aspects of a textbook (e.g. pictures in Smith & Elifson, 1986; readability in Hollabaugh, 1989). Stang (1985) focused on whether college students could consistently rate textbooks, and, in the process, discusses depth, breadth and balance as important aspects in evaluating textbooks.

Several authors have presented topics relating to statistics courses. Some have concentrated on a single subject as it is covered in textbooks (e.g. evaluation methods in Leviton & Cook, 1983; research methods in Schutt, 1987). Chervany et al (1977) discusses how to set up meaningful evaluations of the effectiveness of a course. Cobb (1987) compares 16 statistics textbooks on several different measures, and in the process emphasizes judging the textbook as a tool and not simply as a product. Aiken (1990) has discussed what should be included in a statistics course. However, the particular case of how to systematically select statistics books for social science students has not been addressed to date.

In the course of research conducted with Michael Harwell of the University of Pittsburgh, we have developed a series of five instruments intended to explore several aspects of such a selection. It should be noted that many of the categories of questions in these instruments were inspired by the previously named articles, and our debt to their groundwork is extensive. However, choosing a statistics text for social science students is not as straightforward a task as choosing a text for students in their major field of study, and therefore warrants a specialized

series of instruments.

The instruments we have developed range from a general survey for instructors and students who are currently using a statistics textbook in a course, to particular instruments that may be used on textbooks not currently in use. The instruments are designed so that data obtained from their administration could be useful to broad-range researchers, to departments trying to choose a textbook, or to writers and publishers of new statistics texts.

The five instruments are reproduced in whole in the appendix. These are: 1) a student survey for currently-used textbooks, 2) an instructor survey for currently-used textbooks, 3) an instructor survey of what an ideal statistics textbook would be like, 4) an expert evaluation instrument that may be used on any statistics textbook, and 5) an instrument covering relevant objective information about any statistics textbook.

1. THE STUDENT SURVEY

This survey is aimed at social science students currently enrolled in a statistics course. The way students respond to statistics textbooks is of interest for several reasons. How effectively the textbook is put to use by students will be affected by their attitude towards it. How closely student and instructor responses match in evaluating the textbooks will reflect both on how validly students can assess textbooks and how well instructors understand their students.

We have included questions on demographic information, such

as age and student status, that may be relevant to, or may be of interest in ruling out as influencing, students' ratings of the texts. Of particular note are the questions on date, grade and level of the students' last mathematics courses. A common criticism of statistics courses for social science students is that they presume a higher level of mathematical ability than is commonly the case among these students. The questions about mathematics will help determine the average mathematical background, and whether this background influences the rating of a textbook.

The questions asking students to characterize the explanations, writing style and overall emphasis in the textbook are both to check students' agreement on these matters and to channel the students' thinking into systematic modes. This adds to the systemic validity of the instrument.

Several changes worth noting were made due to responses from the piloting of this instrument. A number of graduate students wrote in that they did not use the assigned textbook at all after the first couple of weeks. Some of these students further specified that they turned to undergraduate texts or computer software manuals as being more understandable. We thereupon added questions and alternatives choices designed to capture this lack of use to the survey.

The student questionnaire initially contained questions on how important the presentations of certain key concepts were in the textbook. However, in piloting, a large proportion of students

responded that they did not know how important the concepts were; one student who did respond with ratings wrote that he or she was not sure if the responses reflected the book's or the instructor's emphasis. This section of the questionnaire was also the one most commented upon by other reviewers. Taking all of these occurrences into consideration, we decided to drop the section on concept presentation entirely from the student questionnaire, retaining it only in the instructors' version.

2. THE INSTRUCTOR SURVEY

This survey is aimed at instructors currently teaching statistics to social science students. It is designed to be used in conjunction with the student survey, and the questions therefore are designed to parallel that survey as much as possible so as to facilitate data comparison. Most of the comments about the student survey are relevant here.

This survey contains a number of questions about the incorporation of statistical software usage into the course. The great improvements in the ability of computers to manipulate data sets, along with the development of affordable statistical software programs, have made the use and choice of such programs a particularly relevant concern in designing statistics courses.

There are also several open-ended questions pertaining to instructors' opinions on the strength and weaknesses of the text in question. We took the open-ended, as opposed to the categorical, approach so as to be able to capture any elements that

may not have been covered elsewhere in the survey, and because the expected sample size would be manageable enough to allow the responses to be categorized post hoc without a major commitment of time.

3. THE IDEAL STATISTICS TEXTBOOK SURVEY

This survey is intended to assess what instructors would most like to see in a statistics textbook intended for social science students. This survey, while of general interest to instructors of statistics courses, could also be used to help design a new textbook, or to help faculty focus on what is important to them in a textbook before evaluating what is actually available.

This survey consists largely of open-ended questions. We considered and rejected the strategy of devising categories for the majority of these questions so as to encourage as much variation and precision of opinion as possible. The analysis of these questions should not be overly time-consuming, given the probable small sample size of any administration.

In several cases where we felt giving choices would be more helpful than limiting to subjects, such as in characterizing the nature of ideal homework problems, we have provided specific categories in addition to an open-ended option.

4. THE EXPERT EVALUATION INSTRUMENT

This instrument is intended to be used on statistics textbooks not currently being used to teach a course. The instrument

presupposes that the people using the instrument have a good basic knowledge of social science statistics, and, if possible, have already taught such a course.

The challenge in designing this instrument was to define a task that would not be prohibitive in length while still allowing representative access to the textbook in question. We therefore chose four topics that are typically covered in no more than a section of a chapter in statistics textbooks, and that should be included in every textbook under review. These topics are divided between conceptual areas--type 1 and type 2 error, and the conceptual overview of statistical inference--and statistical application areas--the chi-square test of independence, and interaction in two-way analysis of variance. Each topic is measured through parallel ratings and open-ended comments.

The highest rating possible in this instrument on overall presentation of a topic in the textbook is, "just how I would do it." This is more than a humorous touch: it is meant to emphasize the subjective nature of any rating of presentation method. Despite the subjectivity of such a rating, how closely a presentation approaches the way an instructor would teach the subject is still an important element in evaluating the utility of a textbook.

5. THE OBJECTIVE INFORMATION INSTRUMENT

This instrument is intended to be used in conjunction with the expert evaluation instrument. It covers the aspects of a textbook

that are relevant to making a choice but that are not related to content, such as the presence of a glossary in the textbook or the contents of the appendices. This instrument would need to be completed only once for any given textbook.

Included in this instrument is a readability measure, based on a combination of the average length of sentences and the proportion of large words in the text. This particular measure, the FOG scale, was chosen over several others for its ease of use and its yielding of scores, stated as year of education the text is suitable for, in the expected undergraduate and graduate range.

DISCUSSION

The degree of validity of student evaluations on textbook evaluation in areas where they are not expert may be questionable. The decision to include a survey for students as a method to evaluate textbooks in this set of instruments was therefore not based on students' knowledge of the subject, but rather on the importance of judging a book's utility at least partly on its ability to reach its intended audience (see Huberty, White and Wolins, 1985).

The fact that college students' overall recommendations for a text may be based on the style, rather than the content, of a text should not be trivialized. The better written and more understandable a text is, the more likely students are to use it during a class, and to refer to it after taking the class. The more likely it is that students use a text, assuming basic content

is adequate, the better served the subject matter will be.

An exceptionally comprehensive text that is difficult to read may leave an impression even with conscientious students that they have no control over how to learn the content, and that their only hope of understanding it is to have the instructor, as a professional, teach them point by point in class. On the other hand, an easier to read, although less comprehensive, text would allow students to explore points made in class in more detail, and leave the impression on students that they have the ability to explore the subject themselves.

It may be difficult for an instructor to adequately assess the style of a textbook, since intimate knowledge of the material may make points seem clear that would be less clear to someone with a sparser background. This makes it especially useful to have some sort of student input whenever textbook quality or choice is being assessed.

CONCLUSION

These five instruments were designed to fulfill a dual purpose: taken in sets, they could assist general research directed towards comparing textbooks; and taken together, they could assist a department trying to choose a textbook for use in a course.

In terms of general research, the student and instructor surveys on textbooks currently in use can be used together to draw comparisons both between books and between student and instructor perceptions. The expert evaluation and the objective information

instruments can be used together to define discrete areas with which to compare textbooks not currently being used by the evaluators. The ideal textbook survey could be used to set a benchmark against which to compare the results of the other instruments.

In terms of assisting a department's selection of a textbook, the five instruments may be used together. The student and instructor surveys may be used to evaluate the textbook currently in use; the expert evaluation and the objective information instruments may be used to evaluate textbooks under consideration; and the ideal textbook survey may be used to focus the faculty's ideas of what should be expected of a textbook.

The choice of a textbook can have a large effect on what is learned in a course. The more accessible the textbook's style, the more it will be used; the more complete the textbook's content, the more valuable it is when the class is over. The importance of the textbook is magnified in statistics classes aimed at social science students, because of the "math anxiety" so prevalent among these students. Huberty, White and Wolins state as the third issue on their list of issues for future researchers to address as:

> 3. <u>The challenge implicit in the need to motivate people in required service courses who are not quantitatively oriented</u>. Are these courses really the "necessary evil" they are sometimes claimed to be, or are some of those students the future public school teachers and university administrators who will have a certain impact on the future of our profession? (p. 171)

We hope that these instruments will have a part in changing that "necessary evil" into sincere appreciation, and even into delight.

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AUTHOR OF TEXT_____
COURSE NUMBER:_____ SECTION NUMBER:_____
INSTRUCTOR: _____

THIS IS AN EVALUATION OF THE WAY TEXTBOOKS ARE USED IN STATISTICS COURSES THAT ARE AIMED AT SOCIAL SCIENCE STUDENTS. YOUR RESPONSES WILL BE KEPT CONFIDENTIAL.

PLEASE CIRCLE YOUR ANSWER TO THE QUESTIONS BELOW.

1a. What is you student status?
- a. Graduate
- b. Undergraduate

1b. What is your major/field?
- a. Psychology
- b. Education
- c. Sociology
- d. Other: Specify _____

2. If you are a graduate student, what was your undergraduate major?
- a. Humanities
- b. Behavioral science, social science or education
- c. Physical or biological science
- d. Mathematics or computer science
- e. Other: Specify _____

3. What is your gender?
- a. male
- b. female

4. What is your age?
- a. 20-24
- b. 25-29
- c. 30-34
- d. 35-39
- e. 40 or older

5. What is the highest level of mathematics that you have studied?
- a. General mathematics
- b. Algebra/Trigonometry
- c. Calculus
- d. Beyond calculus

6. When did you take your last mathematics course?
- a. In the last two years
- b. Two to five years ago
- c. More than five years ago

7. What was your grade in your last mathematics course?
- a. A or B
- b. Below B
- c. Don't remember

8. Have you ever taken a statistics course before?
   a. Yes
   b. No

9. How does your instructor expect you to use the textbook? Check all that apply.
___ a. As a source to learn from
___ b. As a resource to supplement the class lessons
___ c. As the major source for homework problems
___ d. Other--Specify:_____

10. How do you actually use the textbook? Check all that apply.
___ a. As a source to learn from
___ b. As a resource to supplement the class lessons
___ c. As the major source for homework problems
___ d. Other--Specify:_____
___ e. Did not use the book

11. How would you describe the mathematics level assumed in the textbook: (Circle the number)

1	2	3	4	5
very easy		about right		very difficult

12. How would you describe the reading level of the textbook: (Circle the number)

1	2	3	4	5
very easy		about right		very difficult

13. How closely does the table of contents of the textbook match the order of presentation of the materials in class?
   a. The sequence is identical.
   b. There are one or two topics out of sequence or missing
   c. There are three or more topics out of sequence or missing

14. How independent are the chapters from each other?
   a. Most chapters rely heavily on previous chapters
   b. Most chapters rely somewhat on previous chapters
   c. Most chapters may stand on their own

15. How would you describe the homework problems contained in the text? Check all that apply.
____a. Based on actual cited studies
____b. Hypothetical but realistic in set-up
____c. Challenging to do
____d. Interesting and substantive
____e. Too difficult to do
____f. Too easy
____g. Have not had to do any problems from the book
____h. Help strengthen skills and knowledge covered by book

16. The text is easy to understand and follow. (Circle the number)

1	2	3	4	5
strongly disagree		neutral		strongly agree

17. Check all that apply: Explanations rely heavily on

___ a. examples
___ b. proofs
___ c. verbal descriptions
___ d. diagrams or sketches
___ e. graphs
___ f. analogies

18. Check all that apply: The writing style is

___ a. terse
___ b. wordy
___ c. simple
___ d. balanced
___ e. distracting
___ f. such that it does not draw attention away from the subject
___ g. comprehensive (complete)
___ h. easily understandable
___ i. flows easily
___ j. direct
___ k. uneven (terse some places, wordy in others).

19. Check all that apply: Overall emphasis is on

___ a. computations
___ b. actual cited studies
___ c. realistic examples
___ d. theory
___ e. applications
___ f. comprehension
___ g. developing research skills
___ h. computer usage
___ i. experimental design issues
___ j. practical problem-solving

FOR THE FOLLOWING ITEMS, CIRCLE THE NUMBER THAT BEST REPRESENTS YOUR OPINION.

20. Coverage of topics is very complete. (depth)

1	2	3	4	5	9
strongly disagree		neutral		strongly agree	do not know

21. Coverage of topics is proportional to their importance

1	2	3	4	5	9
strongly disagree		neutral		strongly agree	do not know

22. The variety of topics covered is broad

1	2	3	4	5	9
strongly disagree		neutral		strongly agree	do not know

23. The text clearly shows how to systematically perform the computations necessary for using the statistical methods that you are studying.

1	2	3	4	5
not at all	incomplete	minimal (but complete)	thorough	extensive

24. The text clearly shows how the computations are linked to the theory of the statistical method.

1	2	3	4	5
not at all	incomplete	minimal (but complete)	thorough	extensive

25. How useful was the workbook in supplementing the materials contained in the text?

1	2	3	4	5	9
not useful		somewhat useful		very useful	no workbook

26. How frequently did you do the exercises in the text?
   a. frequently
   b. occasionally
   c. seldom/never

26. Would you recommend this book to students who are trying to learn statistics on their own?
   a. Strongly recommend
   b. Recommend
   c. Not recommend

27. Would you recommend the use of this book for a statistics course?
   a. Yes
   b. No

28. Did you make use of a statistical software manual?
   a. Yes
   b. No

29. If yes to question 28- For learning statistics the computer manual was:
   a. More useful than the text
   b. Useful in addition to the text
   c. Less useful than the text
   d. Not useful

INSTRUCTOR NAME: _____ UNIVERSITY:_____
AUTHOR OF TEXT_____
COURSE NUMBER:_____ SECTION NUMBER:_____

THIS IS AN EVALUATION OF THE WAY TEXTBOOKS ARE USED IN STATISTICS COURSES THAT ARE AIMED AT SOCIAL SCIENCE STUDENTS. YOUR RESPONSES WILL BE KEPT CONFIDENTIAL. PLEASE USE ONE FORM FOR EACH TEXTBOOK YOU EVALUATE.

PLEASE CIRCLE YOUR ANSWER TO THE QUESTIONS BELOW.

1a. What is the student status of the course this book is used in?
   a. Graduate
   b. Undergraduate

1b. In which field is your department?
   a. Psychology
   b. Education
   c. Sociology
   d. Other: Specify _____

2. What is your faculty position?
   a. Professor
   b. Instructor/Adjunct
   c. Graduate Student with teaching duties
   d. Other: _____

3. What is your gender?
   a. Male
   b. Female

4. How long have you been teaching?
   a. 1-5 years
   b. 6-10 years
   c. 11-15 years
   d. 16-20 years
   e. more than 20 years

5. What would you say is the average level of mathematics that your students have completed?
   a. General mathematics
   b. Algebra/Trigonometry
   c. Calculus
   d. Beyond calculus

6. How long ago did your average student take a mathematics course?
   a. In the last two years
   b. Two to five years ago
   c. More than five years ago

7. How would you characterize the average attitude towards mathematics of your students?
   a. Good
   b. Indifferent
   c. Poor

8. Have you ever taught a statistics course from a book other than the one you are presently evaluating?
   a. Yes
   b. No

9. How do you expect your students to use the textbook? Check all that apply.
   ____ a. As a source to learn from
   ____ b. As a resource to supplement the class lessons
   ____ c. As the major source for homework problems
   ____ d. Other--Specify:_____

10. How do you think they actually use the textbook? Check all that apply.
   ____ a. As a source to learn from
   ____ b. As a resource to supplement the class lessons
   ____ c. As the major source for homework problems
   ____ d. Other--Specify:_____
   ____ e. Did not use the book

11. How would you describe the mathematics level assumed in the textbook: (Circle the number)

1	2	3	4	5
very easy		about right		very difficult

12. How would you describe the reading level of the textbook: (Circle the number)

1	2	3	4	5
very easy		about right		very difficult

13. How closely does the table of contents of the textbook match the order of presentation of the materials in class?
   a. The sequence is identical.
   b. There are one or two topics out of sequence or missing
   c. There are three or more topics out of sequence or missing

14. How independent are the chapters from each other?
   a. Most chapters rely heavily on previous chapters
   b. Most chapters rely somewhat on previous chapters
   c. Most chapters may stand on their own

15. How would you describe the homework problems contained in the text? Check all that apply.
   ____ a. Based on actual cited studies
   ____ b. Hypothetical but realistic in set-up
   ____ c. Challenging to do
   ____ d. Interesting and substantive
   ____ e. Too difficult to do
   ____ f. Too easy
   ____ g. Have not looked at the problems from the book
   ____ h. Help strengthen skills and knowledge covered by book

16. The text is easy to understand and follow. (Circle the number)

1	2	3	4	5
strongly disagree		neutral		strongly agree

17. Check all that apply: Explanations in the book rely heavily on

____ a. examples
____ b. proofs
____ c. verbal descriptions
____ d. diagrams or sketches
____ e. graphs
____ f. analogies

18. Check all that apply: The writing style in the book is

____ a. terse
____ b. wordy
____ c. simple
____ d. balanced
____ e. distracting
____ f. such that it does not draw attention away from the subject
____ g. comprehensive (complete)
____ h. easily understandable
____ i. flows easily
____ j. direct
____ k. uneven (terse some places, wordy in others).

19. Check all that apply: Overall emphasis in the book is on

____ a. computations
____ b. actual cited studies
____ c. realistic examples
____ d. theory
____ e. applications
____ f. comprehension
____ g. developing research skills
____ h. computer usage
____ i. experimental design issues
____ j. practical problem-solving

FOR THE FOLLOWING ITEMS, CIRCLE THE NUMBER THAT BEST REPRESENTS YOUR OPINION OF THE CONTENT OF THE BOOK.

20. Coverage of topics is very complete. (depth)

1	2	3	4	5	9
strongly disagree		neutral		strongly agree	do not know

21. Coverage of topics is proportional to their importance

1	2	3	4	5	9
strongly disagree		neutral		strongly agree	do not know

22. The variety of topics covered is broad

1	2	3	4	5	9
strongly disagree		neutral		strongly agree	do not know

23. The text clearly shows how to systematically perform the computations necessary for using the statistical methods that you are studying.

1	2	3	4	5
not at all	incomplete	minimal but complete	thorough	extensive

24. The text clearly shows how the computations are linked to the theory of the statistical method.

1	2	3	4	5
not at all	incomplete	minimal but complete	thorough	extensive

25. How useful was the workbook in supplementing the materials contained in the text?

1	2	3	4	5	9
not useful		somewhat useful		very useful	no workbook

26. How frequently did you assign exercises in the text?
    a. frequently
    b. occasionally
    c. seldom/never

27. Would you recommend this book to students who are trying to learn statistics on their own?
    a. Strongly recommend
    b. Recommend
    c. Not recommend

28. Would you recommend continuing the use of this book for a statistics course?
    a. Yes
    b. No

29. Did you make use of a statistical software manual?
    a. Yes
    b. No

30. Did you use supplementary materials other than a software manual?
    a. No
    b. Yes, for enrichment
    c. Yes, because the text was inadequate on one or more topics

31. What would you characterize as the main strength of the book? Was this the reason the book was selected for this class?

32. What would you characterize as the main weakness of the book? Is this also what your students would say?

33. Does the text have materials relating to computer implementation of statistical procedures (e.g. sample SAS programs)?

a) yes
b) no

IF THE ANSWER TO QUESTION 33 IS YES...

34. How useful do you find these materials?

a) I have integrated them into class assignments.
b) I make reference to these materials but do not use them in assignments.
c) I do not use these materials.

35. If you have responded c) to the above question please indicate why you do not make use of these materials. Circle all that apply.

a) Lack of familiarity with the stat package used
b) Inadequacy of materials-please elaborate below
c) Other-please elaborate below

Comments for b) or c):

INSTRUCTOR:_____ UNIVERSITY:_____

THIS SURVEY IS TO ASSESS THE CHARACTERISTICS OF AN "IDEAL" STATISTICS TEXTBOOK FOR SOCIAL SCIENCE STUDENTS.
PLEASE RESPOND TO ALL QUESTIONS IN TERMS OF YOUR PERCEPTIONS OF AN "IDEAL" TEXTBOOK.

1. How would you describe the mathematics level assumed in the ideal textbook? Please be as specific as possible in terms of either course level or particular topics and skills level.

2. How would you describe the reading level of the textbook? Again, please be specific in terms of grade level or types of journals and other reading materials that you would consider of comparable reading level.

3. What should be the structure or order of materials presented? (This question can be answered by taking a copy of an existing table of contents and editing it to reflect your ideal table of contents, or by using the letters of the topics on the right.)

A. Analysis of Variance
B. Factor analysis
C. Multivariate analysis
D. Research methods
E. Evaluation research
F. Experimental design
G. Time series
H. Analysis of covariance
I. Power analysis
J. Nonparametric procedures
K. Chi-square analyses
L. Z-tests
M. T-tests
N. Correlation
O. Regression

4. What proportion of the text per topic would reflect their relative importance in the curriculum? Indicate proportions next to the topics listed in response to question three.

5. How independent/interrelated should the chapters be from each other? Particular illustrations for each comment would be helpful.

6. How would you describe the homework problems contained in the text? Check all that apply. STAR THE SINGLE MOST IMPORTANT.

____ a. Based on actual cited studies
____ b. Hypothetical but realistic in set-up
____ c. Challenging to do
____ d. Interesting and substantive
____ e. No need for problems
____ f. Help strengthen skills and knowledge covered by book
____ g. Other:_____

7. Check all that apply. Star the single most important: Explanations in the book should rely heavily on

____ a. examples
____ b. proofs
____ c. verbal descriptions
____ d. diagrams or sketches
____ e. graphs
____ f. analogies
____ g. other: _____

8. Check all that apply. Star the single most important: Overall emphasis in the book should be on

____ a. computations
____ b. actual cited studies
____ c. realistic examples
____ d. theory
____ e. applications
____ f. comprehension
____ g. developing research skills
____ h. computer usage
____ i. experimental design issues
____ j. practical problem-solving
____ k. other: _____

9. What aspects of the text are most crucial to assure adequate breadth? (e.g. breadth of illustrations, statistical procedures, assortment of designs)

10. What role should hand (not by computer) computational competence play in the overall focus of the text? Please list specific benchmarks such as being able to reproduce outcomes on computerized output, being able to select and apply statistical formulas in an unrealistically simplified example, explain how to use formulas, interpreting computer's computations etc.

11. What role, if any, should a supplementary workbook play? What should it provide the students that the text does not already provide?

12. What role, if any, should computer language instruction, worked computer problems and illustrations play in the text?

13. We all have colleagues who have different textbook perspectives. Which of your characterizations of the ideal text do you think would be the most controversial to your colleagues?

EVALUATOR_____ AUTHOR_____

THIS INSTRUMENT IS INTENDED AS A MEANS OF COMPARISON BETWEEN STATISTICS TEXTBOOKS USED FOR SOCIAL SCIENCE STUDENTS. PLEASE FILL OUT A SINGLE FORM FOR EACH TEXTBOOK EVALUATED.

BEFORE COMPLETING THIS FORM, EVALUATORS ARE EXPECTED TO HAVE READ THE SECTIONS IN THE TEXTBOOK ON: 1) INTERACTION IN TWO-WAY ANALYSIS OF VARIANCE; 2) CONCEPTUAL OVERVIEW OF STATISTICAL INFERENCE; 3)TYPE I AND TYPE II ERRORS; AND 4) CHI-SQUARE TEST OF INDEPENDENCE.

For the interaction in two-way analysis of variance section:

1. Balance: is the time spent on topics in this section proportional to the importance of the topics?

1	2	3	4	5
completely inappropriate		adequate if supplemented in class		excellent use of emphasis

COMMENTS:

2. Breadth: are all the important topics, and the important aspects of those topics, covered in this section?

1	2	3	4	5
major parts left out		adequate if supplemented in class		very complete

COMMENTS:

3. Depth: are the topics covered in sufficient detail in this section, or is the detail too excessive or lacking?

1	2	3	4	5
depth completely inappropriate (too much or little)		adequate if compensated for in class		perfect amount of detail

COMMENTS:

4. How is the topic presented in this section? For example, is an example given first or is a general question posed? Is the theory presented before or after any equations? Is there a worked example? Are actual studies cited, and, if so, where in the presentation?

5. Overall presentation rating:

1	2	3	4	5
very awkward		adequate		just how I would do it

For the conceptual overview of statistical inference section:

1. Balance: is the time spent on topics in this section proportional to the importance of the topics?

1	2	3	4	5
completely inappropriate		adequate if supplemented in class		excellent use of emphasis

COMMENTS:

2. Breadth: are all the important topics, and the important aspects of those topics, covered in this section?

1	2	3	4	5
major parts left out		adequate if supplemented in class		very complete

COMMENTS:

3. Depth: are the topics covered in sufficient detail in this section, or is the detail too excessive or lacking?

1	2	3	4	5
depth completely inappropriate (too much or little)		adequate if compensated for in class		perfect amount of detail

COMMENTS:

4. How is the topic presented in this section? For example, is an example given first or is a general question posed? Is the theory presented before or after any equations? Is there a worked example? Are actual studies cited, and, if so, where in the presentation?

5. Overall presentation rating:

1	2	3	4	5
very awkward		adequate		just how I would do it

For the type I and type II errors section:

1. Balance: is the time spent on topics in this section proportional to the importance of the topics?

1	2	3	4	5
completely inappropriate		adequate if supplemented in class		excellent use of emphasis

COMMENTS:

2. Breadth: are all the important topics, and the important aspects of those topics, covered in this section?

1	2	3	4	5
major parts left out		adequate if supplemented in class		very complete

COMMENTS:

3. Depth: are the topics covered in sufficient detail in this section, or is the detail too excessive or lacking?

1	2	3	4	5
depth completely inappropriate (too much or little)		adequate if compensated for in class		perfect amount of detail

COMMENTS:

4. How is the topic presented in this section? For example, is an example given first or is a general question posed? Is the theory presented before or after any equations? Is there a worked example? Are actual studies cited, and, if so, where in the presentation?

5. Overall presentation rating:

1	2	3	4	5
very awkward		adequate		just how I would do it

For the chi-square test of independence section:

1. Balance: is the time spent on topics in this section proportional to the importance of the topics?

1	2	3	4	5
completely inappropriate		adequate if supplemented in class		excellent use of emphasis

COMMENTS:

2. Breadth: are all the important topics, and the important aspects of those topics, covered in this section?

1	2	3	4	5
major parts left out		adequate if supplemented in class		very complete

COMMENTS:

3. Depth: are the topics covered in sufficient detail in this section, or is the detail too excessive or lacking?

1	2	3	4	5
depth completely inappropriate (too much or little)		adequate if compensated for in class		perfect amount of detail

COMMENTS:

4. How is the topic presented in this section? For example, is an example given first or is a general question posed? Is the theory presented before or after any equations? Is there a worked example? Are actual studies cited, and, if so, where in the presentation?

5. Overall presentation rating:

1	2	3	4	5
very awkward		adequate		just how I would do it

TEXTBOOK AUTHOR_____

THIS INSTRUMENT IS INTENDED TO BE AN OBJECTIVE MEASURE OF CERTAIN IMPORTANT ASPECTS OF TEXTBOOK LAYOUT. PLEASE COMPLETE A SINGLE FORM FOR EACH TEXTBOOK TO BE EVALUATED.

1. Does the book have: a teacher's manual YES NO
   a student's workbook YES NO

2. Check the internal structures present in the book:

   ____ a. Detailed table of contents
   ____ b. Introductions at the beginning of chapters
   ____ c. Summaries at the end of chapters
   ____ d. New terms listed at the end of chapters
   ____ e. Glossary
   ____ f. Labeled diagrams
   ____ g. Answer key

3. What does the Preface say about the:

   Intended audience:

   Purpose:

   Point of view:

   Suggestions for use:

4. What is the average number of study questions per chapter?

5. What, if any, computer program is used in the book?

6. List the topics of any appendices:

7. Readability: Compute the FOG index twice for each book and average the results. This index is intended to be a rough measure of the year of school the reading level is aimed at. However, note that it was not originally intended for use at college and graduate levels. See the next page for directions on how to compute.

   AVERAGE OF THE TWO FOG INDICES: _____

HOW TO COMPUTE THE FOG INDEX:*

Count off 100 words, starting at the beginning of a sentence, on each of the pages that divide the book into thirds, and continue until you each the end of a sentence (if the page is part of a problem set, or otherwise not typical, go to the first typical page).

1/3 through:	Number of sentences:	_____
	Number of words:	_____
	Average number of words per sentence:	_____
	Number of words with 3 or more syllables:	_____
FOG index:	Sum of average number of words + number of words with 3 or more syllables	_____
	Multiply by 0.4, round to nearest integer	_____
2/3 through:	Number of sentences:	_____
	Number of words:	_____
	Average number of words per sentence:	_____
	Number of words with 3 or more syllables:	_____
FOG index:	Sum of average number of words + number of words with 3 or more syllables	_____
	Multiply by 0.4, round to nearest integer	_____

* Adapted from Hollabaugh, M. (1989). Textbook selection: Clearing the fog. Journal of College Science Teaching. 18, 5, 327-329.